

Amendments to the Specification

Please amend the paragraph beginning at page 8, line 22 and ending at page 8, line 32 as follows.

In a process window 1 according to Fig. 2a and 2b, the accommodation sleeve 7 with the internal thread 8 is welded into a pipe ~~[[13]]~~ 20 above the measurement-cell body 2. A screw-in sleeve 5, which has an external thread 6, is screwed into the accommodation sleeve 7. The screw-in sleeve 5 has holes 21 in the head part, into which pegs of an Allen key (not shown) are able to engage for screwing together. The screw-in sleeve 5 has a planar surface on its underside, which is in contact with the window pane 3. The window pane 3 is in the design according to the invention (Fig. 2a and 2b) pressed by means of the screw-in sleeve 5 via a ring seal 22 against a seal 4, which sits in an annular groove in the lower, projecting part of the accommodation sleeve 7 and seals the interior 10 of the pipe 20 off against the environment.

Amendments to the Abstract

Please amend the Abstract as follows. A clean copy of the Abstract is attached hereto.

PRESSURE-PROOF PROCESS WINDOW

ABSTRACT OF THE DISCLOSURE

Abstract

A pressure-resistant process window (1) for visual or spectroscopic examinations of pressurized products in pipes and reactors. The process window (1) consists of at least a measurement-cell body (2), which is connected to the pipe or the reactor, and a transparent window pane (3), a seal (4) between the measurement-cell body (2) and the window pane (3) for sealing the reactor or pipe interior off from the environment, where the window pane (3) is held against the measurement-cell body (2) in a sealing manner by ~~means~~ use of a screw barrel (5) having an external thread (6), which can be screwed into a hollow barrel (7) with internal thread (8) which is connected to the measurement-cell body (2).

Amendments to the Drawings

Figs. 1a, 1b, 2a, 2b, 4a and 4b are amended as follows:

In Figs. 1a and 1b, the indication (Prior Art) has been added.

In Figs. 2a and 2b, reference numeral 2 (body) has been added as used in Figs. 3 and 4.

In Figs. 4a and 4b, reference numeral 23 has been added referring to a pipe as in Figs. 2 and 3.

Figs. 1a, 1b, 2a, 2b, 4a, and 4b are included in the LETTER TO OFFICIAL DRAFTSPERSON submitted herewith.

REMARKS

Claims 10-17 are pending in the application. The specification has been amended to correct the reference numbers referred to in the drawings. The drawing figures have been corrected to more precisely describe the invention. The Abstract has been amended to more precisely describe the invention.

Objection to the Specification

The Examiner has objected to the Specification indicating that the Abstract includes the objectionable term "means." The term "means" has been replaced with the term "use." Therefore, the objection should be withdrawn.

Objection to the Drawings

The Drawings are objected to because Figs. 1a and 1b are not designated as "prior art", Figs. 2a and 2b do not show a "pipe 13" or a "body 2", Figs. 4a and 4b do not show a "steel sleeve 23" and because reference characters "13" and "20" are both used to designate "the pipe"

In the Letter To Official Draftsman submitted herewith, the following amendments have been made. In Figs. 1a and 1b, the indication (Prior Art) has been added. In Figs. 2a and 2b, reference numeral 2 (body) has been added as used in Figs. 3 and 4. In Figs. 4a and 4b, reference numeral 23 has been added referring to a pipe as in Figs. 2 and 3.

The specification has been amended so that "the pipe" is only referred to by reference numeral 20.

As the Objections to the Drawings have been addressed, they should be withdrawn.

Rejection Under 35 U.S.C. §§ 102() & 103(a)

Claims 10-14, 16 and 17 stand rejected under 35 U.S.C. § 102(b) as being anticipated by U.S. Patent No. 5,003,174 to Datwyler et al. (hereinafter "Datwyler").

The present invention is directed to a pressure resistant process window for visual or spectroscopic examination of pressurized products in a pipe or a reactor. The window includes at least one measurement-cell body that is connected to a pipe or a reactor, a transparent window pane sealed against the measurement-cell body with a screw barrel, and a seal between the measurement-cell body and the window pane. The transparent window pane has (i) a central region, (ii) an outer region, and (iii) a wall thickness in the central region that is greater than a wall thickness in the outer region. The window pane is sealed against the measurement-cell body with a screw barrel having an external thread that can be screwed into a hollow barrel that (a) has an internal thread that is connected to the measurement-cell body, and (b) is connected to the measurement-cell body in a pressure-resistant or in a pressure-resistant and detachable manner. The seal between the measurement-cell body and the window pane seals the reactor interior or pipe interior from the surroundings of the reactor interior or pipe interior.

Datwyler discloses optical high-pressure transmission cells that include a pressure-resistant housing part with two intersecting bores, one of them forming a fluid passage and the other one forming a light transmission path. The bore forming the light transmission path is provided with inserted windows. The windows are designed as stepped windows having central cylindrical neck portions engaging the bore serving as a light transmission path so that the chamber is delimited by end faces of the neck portions. Sealing is effected by O-rings.

Applicants note that Datwyler does not disclose that "the window pane is sealed against the measurement-cell body with a screw barrel having an external thread that can be screwed into a hollow barrel that (a) has an internal thread that is connected to the measurement-cell body" as in the present invention. According to

col. 5, lines 24-26 of Datwyler, each window 4 is held in place by a threaded ring 12 which can be screwed upon a cylindrical shoulder 14 of the housing provided with a matching outer thread 13. Figure 1 clearly shows that the shoulder 14 of housing 1 has an outer thread 13. Accordingly, the threaded ring 12 has an inner thread and is screwed upon the shoulder 14. In contrast, the present invention discloses a measurement-cell body 2 comprising a hollow barrel 7 that has an internal thread 8. The present invention further teaches a screw barrel 5, which has an external thread 6 and is screwed into the hollow barrel 7.

In short, Datwyler disclose a housing with an external thread and a ring with an internal thread, whereas the present invention requires a housing with an internal thread and a hollow barrel with an external thread.

Compared to the optical high-pressure transmission cell of Datwyler, the present pressure resistant process window has a simpler design. According to page 8, lines 28-31 of the specification, the window pane 3 is pressed by means of the screw-in sleeve 5 via a ring seal 22 against a seal 4 which sits in the accommodation sleeve 7. Thus, in the present invention, only two seals and a screw barrel to fix the window into the measurement-cell body are needed. According to col. 5, lines 24-39 of Datwyler, the window is held in place by a threaded ring 12. Between the ring and the outer surface of the window, there is a pressure piece 16 and intermediate rings 19 and 20. Between the inner surface of the window and the housing, there is an O-ring. Hence, the transmission cell is more complex. The advantage of the present invention is to have fewer parts than the transmission cell of Datwyler. Thus providing an easier manufacturing process.

The Examiner refers to col. 1, line 8 in rejecting Claim 13 as being disclosed by Datwyler. This holding is not correct, because Claim 13 states that the hollow barrel is connected to the measurement-cell body in a pressure-resistant, detachable manner. However, at col. 1, line 8, Datwyler teaches a pressure-

resistant housing element, but it does not teach a hollow barrel being connected to the measurement-cell body in a detachable manner.

In order to anticipate a claim, a prior art reference must disclose every limitation of the claim. As Datwyler does not disclose the limitations of the claimed invention as outlined above, it cannot anticipate the claims. Therefore, the rejection under 35 U.S.C. § 102(b) should be withdrawn.

Rejection Under 35 U.S.C. §§ 102(e) & 103(a)

Claim 15 stands rejected under 35 U.S.C. § 103(a) as being obvious over Datwyler. The Examiner alleges that it would have been obvious to select a ring made of graphite.

In the present invention, Applicants sought to provide a process window which does not leak, has high pressure resistance, is able to operate over an extended period of time, and requires fewer parts than those known in the prior art. Applicants solved the problems in the prior art and satisfied the stated requirements by way of the process window of the presently claimed invention.

As noted above, Datwyler requires a housing with an external thread and a ring with an internal thread. Datwyler does not disclose, teach or motivate one skilled in the art to use a housing with an internal thread and a hollow barrel with an external thread as required in the present claims. Further, Datwyler requires a pressure-resistant housing element, but does not suggest or motivate one skilled in the art to use a hollow barrel being connected to the measurement-cell body in a detachable manner. Additionally, Datwyler does not suggest or motivate one skilled in the art to use only two seals and a screw barrel to fix the window into the measurement-cell body.

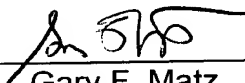
As Datwyler provides no suggestion or motivation to modify the disclosed optical high-pressure transmission cells to arrive at the presently claimed pressure

resistant process window, Datwyler cannot render the present claims obvious. Therefore, the rejection under 35 U.S.C. § 103(a) should be withdrawn.

CONCLUSION

As all of the rejections and objections have been addressed, Applicant asserts that the specification and claims are in form for allowance. Therefore, in view of the above amendments and remarks, reconsideration of the rejections and allowance of Claims 10-17 are respectfully requested.

Respectfully submitted,

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A pressure-resistant process window (1) for visual or spectroscopic examinations of pressurized products in pipes and reactors. The process window (1) consists of at least a measurement-cell body (2), which is connected to the pipe or the reactor, and a transparent window pane (3), a seal (4) between the measurement-cell body (2) and the window pane (3) for sealing the reactor or pipe interior off from the environment, where the window pane (3) is held against the measurement-cell body (2) in a sealing manner by use of a screw barrel (5) having an external thread (6), which can be screwed into a hollow barrel (7) with internal thread (8) which is connected to the measurement-cell body (2).